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FEATURE ARTICLE: 100 YEARS OF STATISTICS IN AUSTRALIA (footnote 1)

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INTRODUCTION

On 8 December 2005 the Australian Bureau of Statistics celebrates 100 years of service to the people of Australia. On that date 100 years ago Parliament gave its assent to the Census and Statistics Act 1905. In the following year George Handley Knibbs was appointed Commonwealth Statistician and the Commonwealth Bureau of Census and Statistics was established.

Celebrating a centenary provides an opportunity to reflect on what has changed for us, what has remained the same and what the future may hold. This article looks at the ABS' role in a democracy, 100 years of statistics - what has not changed and what has changed, the ABS as a statistical provider and the ABS as a statistical leader.

THE ABS' ROLE IN A DEMOCRACY

Contrary to popular belief, in well compiled official statistics the numbers do not lie, but like all information they need to be viewed in their correct context. They may show certain information which may or may not gel with the perceptions of commentators. And they may not be welcomed by Government because they can measure the magnitude of problems or policy failure, or by the Opposition because they can measure positive progress and policy success.

For these reasons a strong official statistical agency is one of the most important elements of an effective democracy. It is no accident that the two go hand in hand. To quote a 1993 White Paper on Open Government in the United Kingdom.

"Official statistics are collected by government to inform debate, decision making and research both within government and by the wider community.

"They provide an objective perspective of the changes taking place in national life and allow comparisons between periods of time and geographical areas.

"Open access to official statistics provides the citizen with more than a picture of society. It offers a window on the work and performance of government itself, showing the scale of government activity in every area of public policy and allowing the impact of public policies and actions to be assessed."

Or to provide a more local flavour, the former Governor-General, Sir William Deane, once referred to the ABS as providing a "mirror" on society. This is a highly appropriate metaphor.

To play this role effectively, the ABS has to be trusted. Trust means many things.

Trust means the confidence that statistics are compiled and presented objectively.

Trust means that there is confidence in the quality of the statistics. This does not mean the statistics are always “error free” but it does mean they have been collected and processed professionally and have not been manipulated for expediency.

Trust also means that providers of data are confident that we are a reliable custodian of their data and that its confidentiality will be protected. By law, ABS must not reveal private information about individuals and we uphold that law without exception. Without that we would not have the high level of public co-operation we experience in our collections.

Throughout the last hundred years each head of the organisation has been passionate about maintaining trust in the work of the ABS. As former Prime Minister, Billy Hughes once said of the Statistician at the time: “There are only two people I trust – God and the Commonwealth Statistician.”

It only requires one significant incident for that confidence to be questioned. It is for this reason that ABS is very careful in what it does. And we admit if we make errors. Many users of ABS statistics know that we issue corrections on material if we have made a mistake. It is a deliberate policy. That means the public can have confidence that what we publish the rest of the time is correct.

The public can also have confidence in the integrity of the ABS. What we publish is objective information, free of government policy bias or political spin.

It is always gratifying to see public debate that uses ABS statistics without qualification or question. For the fact is, the public and Australia can have strong faith in their official statistics. The same cannot be said in many other countries where pressure and influence can impact on what is collected, how it is collected and how it is released.

The need for a strong and independent national statistical office has been supported by a succession of governments, and indeed oppositions.

It is the role of the chief statistician to defend and uphold the integrity of official statistics. Australia’s robust democracy demands that the ABS be objective and publish without fear or favour. That the challenge has been met for 100 years, is a credit to the wisdom of our political leaders: to let the ABS get on with its job and to provide it adequate funds to evolve its collections and activity as the needs of our society changes.

100 YEARS OF STATISTICS

A vision of reliable and objective information was at the heart of why Australia’s national statistical agency was created, about 100 years ago, on the 8th of December 1905, with the passing of the Census and Statistics Act. The agency created in 1905 was known as the Commonwealth Bureau of Census and Statistics.

Fifty years later, in 1956, in what is something of a rarity, the Commonwealth and State governments agreed on an integrated statistical system that served both levels of government as well as the community at large. This integrated system appears to have served Australia well and is certainly superior to the federated system that still operates in some countries.

The national office continued to operate as the Commonwealth Bureau of Census and Statistics until 1975 and for much of the period was a branch of Treasury. From all reports, this did not

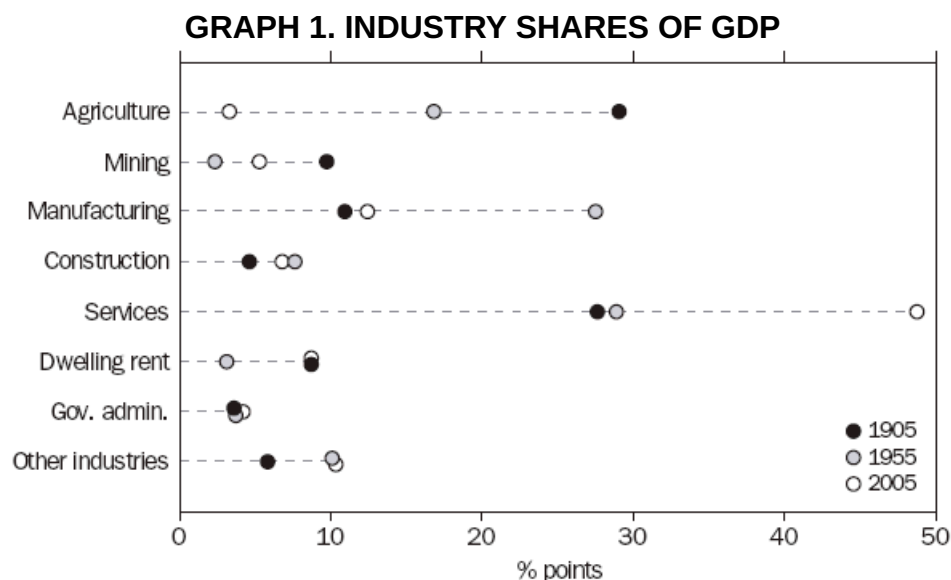
affect the independence of the Bureau except on the important matter of budget allocations - not surprisingly funds for economic statistics were easier to find than those for social statistics!

The next major change was the transformation of the Commonwealth Bureau of Census and Statistics into an independent statutory authority known as the Australian Bureau of Statistics. This happened in 1975.

100 YEARS OF CHANGE

In 1905 Australia's population reached 4 million. Of these people, around 4,000 were still alive in 2005, but in their lifetime the national population has increased more than five fold.

The composition of Australian industry has also changed dramatically over 100 years. Graph 1 shows data from 1904-05, 1954-55 and 2004-05. The graph highlights the major contribution of the services industry to GDP at all three time points, and the fall in agriculture's share of GDP between 1954-55 and 2004-05. Importantly, an industry's share of GDP should not be seen as an indicator of an industry's performance, but rather as a relative indication of how significant an industry is to the economy at a particular point in time.



Source: Australian System of National Accounts, cat. no. 5204.0 and unpublished data

The availability of long time series of statistics make it possible for historians and social commentators to look at how our nation has changed over time.

WHAT HAS NOT CHANGED FOR THE ABS OVER THE LAST 100 YEARS?

As part of our centenary year, we have been reviewing our history. A number of important things have remained largely the same over that time.

The core purpose of the ABS has not changed. It continues to be charged with providing a relevant and trusted statistical service to governments and the community at large.

Another constant is the influence of core values on how the ABS works. These values have remained constant over the years. In short they are relevance, integrity, professionalism, equality

of access to ABS information, and protection of the confidentiality of information provided to the Bureau by both individuals and organisations.

Another constant over 100 years has been the willingness to adopt new technology and methods to improve the way we do things. We recognise that innovation is essential if we are to move forward, and we are not shy about doing that. We are generally regarded as being a world leader in the application of technology and statistical methods.

WHAT HAS CHANGED FOR THE ABS?

Although the ABS's core purpose has not changed, many other things have. The biggest changes are in the type of outputs we produce, the way we produce them and the way we deliver statistics to users.

At the start of the life of the Bureau, the core statistics were based on the Population Census, birth, death and marriage registrars, customs records, other administrative systems and the occasional non-random sample survey.

When you look at some of today's most important statistics you might be surprised at how they have changed since those early days:

- No national accounts - quarterly national accounts did not appear until the late 1960s.
- No balance of payments - they did not appear until the 1930s although trade statistics have existed since the early days.
- No Consumer Price Index. But a Retail Price Index was first compiled in 1912.
- No monthly labour force statistics until the late 1970s.

Another big change has been the introduction of sample surveys as a valid alternative to the traditional census approach. Surveys of business relating to stocks (inventories), capital expenditure and labour turnover were conducted from 1947.

The way we produce statistics has also changed considerably with the advent of technology. No more slide rules or mechanical calculators and soon no mainframe computer!

The Population Census provides a good example of how the processing of statistics has changed. Hand processing was largely used in 1911. Four million records were involved. Not surprisingly, it took 3 years and a small army to produce the first results. Hollerith machines for sorting and tabulating were deployed for the following Census, and versions of this equipment used for subsequent censuses up until 1961. This reduced the cost of processing the Census as well as improving the timeliness and accuracy. Mainframe computers were first introduced in 1966 and improved technology has been used in each subsequent Census to improve performance. We have resisted the temptation to stand still. For example, we expect to process the 2006 Census in less time than in 2001. That's after an estimated 8 percent increase in population, and therefore the number of census forms to process.

There has also been a dramatic change in the way we disseminate statistics. In the early days, there was complete reliance on paper publications, a release format which has only in the past 25 years begun to give way to electronic dissemination including CD-Roms in the mid-1980s and the Internet since the mid 1990s.

Now to the future.

THE ABS AS A STATISTICAL PROVIDER

The core role for the ABS will continue to be to provide the most appropriate sets of statistics that are fit for purpose. But the mix will change and ABS will need to keep up with that demand.

It would be foolhardy to try to predict the changes in statistical themes in the future except to say they are likely to be substantial. If you look back 15 years, the ABS did not produce environment statistics, information technology statistics, culture and leisure statistics or many statistics about indigenous people except for a few Population Census based data items.

It is not just a matter of collecting statistics on a particular topic. For them to be meaningful, it is necessary to work closely with the users, especially the policy analysts, to better understand the underlying issues. We like to know the problem before we help with a solution.

There will be changes in the way the ABS collects data. Whilst Censuses and sample surveys will continue to be the main source for official statistics, better technology has meant data from administrative systems are making something of a comeback as a source for official statistics.

What is increasingly possible is the ability to link data sets to make them much richer for statistical purposes. Our sister agencies in many other countries have already started down this path. We have been more cautious.

There are privacy issues that have to be carefully managed. We would not do anything that would threaten the confidentiality of those that provided the data.

Our strategy for moving forward in this arena is to reassure the public of our record at respecting their confidentiality interests while at the same time presenting the benefits of such developments.

Such changes may not be easy in an Australian context but have the potential to provide a statistical catalyst to research and development in important areas of our lives such as health.

The other big change in data collection will be the use of the internet. Over the last 20 years, technology has changed the way in which data is collected and captured. This will continue in the future. As one example, an e-form is being designed for the 2006 Population Census. Take up rate is expected to be about 10% but this will surely increase over time.

Also, more and more businesses are interested in reporting by internet especially if statistical returns can be automatically extracted from their own accounting systems. Some countries are examining these possibilities aggressively and we will watch these developments with interest.

Looking at statistical outputs, it is only 10 years since the ABS first established its web site. Now, apart from information provided through the media, it is how most statistical users obtain ABS statistics. Our web site use is currently about 50 million page views per year. This trend will continue with the rapid increase in the demand for statistics.

More generally, our more sophisticated users are looking for improved access to more detailed data research and policy analysis purposes. Whilst fully understanding this need and trying to find ways to support it, the ABS must not do anything that would compromise the trust and confidence of respondents to our surveys.

There is another important trend. Increasingly, we find that our users want to compare statistics for Australia with those of other countries. This gives a context for Australian figures. Differences can be very illuminating in evaluating the effectiveness of current policy or assessing alternative policy options. This can only be done if you are comparing like with like. This is one of the reasons that the ABS is an active contributor to international statistics, particularly on the development of international standards. We are respected in these fora because we treat each

issue on its statistical merit.

These are just a few of our future challenges but it gives a feel for how some aspects of official statistics might change.

THE ABS AS A STATISTICAL LEADER

According to its legislation, the ABS has a responsibility for the coordination of official statistics. Since 1975, the ABS has introduced a range of programs to complement and add value to the statistical activities of other agencies. However, none of these programs proved to be enduring.

Recently, a range of exciting opportunities have emerged which will enable us to realise the potential of obligations articulated in our legislation.

The world of statistics is changing and we are moving towards a national statistical system where the ABS is only one of the providers of statistics albeit a very important provider.

A prime reason for the increase in providers of statistics is the advent of administrative data in digital form. Whereas in the past, the ABS would normally be expected to produce official statistics based on those systems, this is no longer the case - the administering agencies are often best placed to compile the statistics themselves, but the ABS has an important role to play to ensure these statistics are of good quality. These other providers of statistical services are looking for leadership, a role which the ABS is keen to provide.

There are two main reasons why there is demand for increased leadership:

- First, Government agencies are increasingly demanding that policy formation be based on evidence and that outcomes of government programs are measured. This requires a wide range of new statistics which must be delivered in a timely fashion. These new demands for statistics required data obtained from administrative sources to complement traditional sources.
- Second, Government agencies are increasingly providing seamless services through connected government. Policy is increasingly being developed across traditional silos of government to produce better outcomes for all Australians. The information required to support this new view of policy requires comparability of data from a range of sources using common statistical standards, classifications and methods.

The ABS is looking at a range of new initiatives to improve Australia's statistical environment. One of the most important is the ABS' National Data Network (NDN) initiative. The network is a distributed library of data holdings relevant to policy analysis and research. These data holdings remain held and controlled by their custodian organisations. The NDN is a central hub hosted by the ABS for searching, acquiring and sharing statistical information.

The NDN could revolutionise the way statistics are published in Australia and will gradually expand as new organisations connect to it and add their repositories of data. The Australian Institute of Health and Welfare is already online and the Queensland government's Office of Economic and Statistical Research is expected to be next. The Tasmanian government is also keen to participate in the project. Whilst data is held by each custodian, the National Data Network provides a complete catalogue of available data sources to allow users to easily search for, and access data holdings which have been published. In effect, it will provide a portal to official statistics.

MORE INFORMATION ON ABS HISTORY

To commemorate its centenary, the ABS has produced a publication of over 320 pages,

describing its history throughout the century. *Informing a Nation: the Evolution of the Australian Bureau of Statistics* was released on 31 October 2005.

Informing a Nation is a popular history of the ABS and its predecessor, the Commonwealth Bureau of Census and Statistics. It covers the period from 1905 to the present day. The publication is organised thematically and includes chapters on subject areas such as economic statistics, the census, social statistics, prices, methodology, technology, international relations, clients and dissemination, and the staff of the ABS. As well as the written history, the publication includes many images of the work of the ABS and its staff over the last century.

CONCLUSION

Reviewing the ABS in its centenary year, it has a fine history and has served Australia well. It plays a vital role in an Australian democracy - not just because it provides information which serves as a mirror on society - but because that information is trusted.

This trust is important to governments. Because of this trust, discussions can focus on what the statistics mean for policy rather than on the integrity of the statistics themselves.

The Commonwealth Bureau of Census and Statistics was established in 1905 as one of the pillars of democracy. Today the Australian Bureau of Statistics continues that role and so much more. The Bureau has retained the core values of those early years: relevance, integrity, professionalism, confidentiality and access for all.

Our 100 years of history has provided a fine foundation on which to stand as we address the challenges of the future. There must be changes if we are to remain relevant and provide value for the money that is appropriated to us. But more than anything else we have to be careful that we do not lose trust - it is our comparative advantage. If we lose trust, we risk becoming just another information provider. After 100 years of service to help build the nation, that would be a great loss to Australia.

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Footnotes

1 This article is largely based on “Truth, Damned Truth and Statistics” National Press Club Telstra Address by Dennis Trewin, The Australian Statistician, March 9 2005. [back](#)

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